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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,523	02/23/2004	Allan J. Kuchinsky	10030635-1	1472

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EXAMINER	
LONG, ANDREA NATAE	
ART UNIT	**PAPER NUMBER**
2176	

NOTIFICATION DATE	DELIVERY MODE
10/19/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IPOPS.LEGAL@agilent.com

Office Action Summary	Application No.	Applicant(s)	
	10/784,523	KUCHINSKY ET AL.	
	Examiner	Art Unit	
	Andrea N. Long	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2004 and 23 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-57* is/are pending in the application.

4a) Of the above claim(s) *1-7 and 30-50* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-29 and 51-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/23/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 1-7 and 30-50 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 07/23/2007.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 8-11, 18-23, 26-29, 51-53, and 54-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eric Infanti (Microsoft Visio 2002: 10 Minute Guide, 2002), hereinafter Infanti in view of Macrae et al. (US Patent 5826237), hereinafter "Macrae".

As to independent claim 8, Infanti teaches a system for manipulating data comprising (Visio):

a library of re-usable stencils for representing interactions; (page 13, 156-157, Figure 1.7);

means for selecting stencils to be populated with specific information (creating a stencil);

means for assigning specific data to selected stencils (dragging shapes to the stencil); and

means for displaying stencils with the assigned specific data (opening the stencil) (pages 153-157).

Infanti teaches where Visio is used to represent a database model, such as entities and relationships in a database model diagram, objects in the physical world, and objects in a organizational hierarchy (page 12), but does not explicitly teach where the data and information is biological data or biological information. Macrae teaches a graphical user interface similar to that of Visio for creating and editing diagrams which includes a medical diagram consisting of biological terms (Figs. 16-19, Virus, Strep).

It would have been obvious to one skilled in the art at the time the invention was made to substitute the manipulating of data and information as that of Infanti with biological data and information to represent and manipulate a network diagram efficiently.

As to dependent claim 9, Infanti teaches means for connecting common elements of said stencils with assigned specific biological data to display a biological diagram having said stencils as components thereof (page 12-14).

As to dependent claim 10, Infanti teaches means for designing and saving additional stencils not previously contained in said library (pages 153-157).

As to dependent claim 11, Infanti teaches means for modifying stencils contained in said library (page 151).

As to dependent claim 18, Infanti teaches means for navigating to data selected from said specific biological data and displayed on at least one of said stencils (page 113-114).

As to dependent claims 19 and 20, note the discussion above in claim 8, Infanti in view of Macrae teaches a systems for selecting stencils to be populated with biological information. Infanti also teaches wherein Visio stencils are files (page 13). While neither Infanti nor Macrae disclose comparing two stencils and displaying the difference, this method is well known in the art, such as that of the Diff tool, which compares two files and outputs the differences between the two files.

It would have been obvious to one skilled in the art at the time the invention was made to have included the use of a comparison tool such as the Diff tool to compare stencils to provide visual representation of differences in stencils that would lead to updates and managing of stencils in a library.

As to dependent claim 21, note the discussion above in claim 19. Infanti additionally teaches means for mapping between said selected stencils containing specific biological data and an existing biological diagram (pages 113-114).

As to dependent claim 22, Infanti teaches adding elements to a stencil on said canvas (pages 148-150).

As to dependent claim 23, Infanti teaches means for merging said stencils with a biological network and means for displaying said stencils merged with said biological network (pages 12-13).

As to dependent claim 26, Infanti teaches means for linking the displayed stencils with other sources of biological data from which the specific biological data was extracted, using a local formatting language (pages 93,113-114).

As to dependent claims 27, 28, and 29, Infanti teaches means for annotating at least a portion of at least one of said stencils, wherein the annotating includes text and overlaying annotations on a biological diagram (pages 63-64).

As to dependent claim 51, Infanti teaches wherein each stencil in the library of re-usable stencils comprise:

graphical elements (shapes) representing entities and at least one interaction; each said graphical element comprising semantics representative of a particular type of biological entity or interaction; and

slots for providing specific biological information, including specific entity names and directionality of interactions (page 12-13, 63-64).

As to dependent claim 52, note the discussion of claim 8, Infanti teaches a visual grammar (stencil) is represented in local format, enabling interactive functions to be performed among biological diagrams, textual documents (pages 93, 113-114). Infanti does not explicitly teach experimental data. Applicant's admitted prior art discloses that experimental data is well-known and common method used to help biologist create and manipulate information related to biological networks. It would have been obvious to one skilled in the art at the time the invention was made to have included experimental data in the system of Infanti in view of Macrae to provide analyzed information to a result for comparison.

As to dependent claim 53, Infanti teaches wherein when said slots are filled with specific biological information, said specific biological information is automatically added to the local format (pages 63-64).

As to dependent claim 54, Infanti teaches wherein said stencils can exist at multiple levels of abstraction, ranging from molecular interactions to higher-level biological concepts (page 148).

As to dependent claim 55, Infanti teaches wherein stencils can be composed hierarchically to compose relatively more complex stencils from relatively smaller stencils (153-154).

As to dependent claims 56 and 57, Infanti teaches wherein said stencils are

collaboratively useable among multiple users by sharing of filled in stencils (page 148).

4. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Infanti in view of Macrae as applied to claim 8 above, and further in view of Apprentice Systems—Microsoft Case Study (August 2001), hereinafter "Flowtronex".

As to dependent claim 12, Infanti teaches a system for manipulating data (Visio). Infanti does not teach wherein the data is biological data and designing and associating rules with stencils. Macrae teaches a medical diagramming user interface. Flowtronex teaches an overlay onto Visio that designs and applies rules to Visio shapes (page 2 and 3).

It would have been obvious to one skilled in the art at the time the invention was made to have combined the system of diagramming biological data of Infanti in view of Macrae with the designing and applying of rules to Visio master shapes to eliminate manual processing by creating a automatic process.

As to dependent claims 13, 14, and 15, Infanti teaches a system for manipulating data (Visio). Infanti does not teach wherein the data is biological data and means for rule checking to validate interaction represented by a stencil and checking those roles against additional data within a pre-existing diagram. Macrae teaches a medical diagramming user interface. Flowtronex teaches an overlay onto Visio that

designs and applies rules to Visio shapes. In addition, Flowtronex scans a Visio drawing and performs checks to prevent illegal connections as applied to the knowledge generated by the Apprentice Mentor tool (page 2 and 3).

It would have been obvious to one skilled in the art at the time the invention was made to have combined the system of diagramming biological data of Infanti in view of Macrae with the checking of rules of Flowtronex to eliminate illegal connections.

As to dependent claim 16, note the discussion above of claim 14, Infanti teaches a system for manipulating data. Infanti does not disclose wherein said additional data comprises experimental data. Applicant's admitted prior art discloses that experimental data is well known and common method used to help biologist create and manipulate information related to biological networks. It would have been obvious to one skilled in the art to include experimental data in the system of Infanti in view of Macrae in further view of Flowtronex to provide analyzed information to a result for comparison.

As to dependent claim 17, note the discussion above of claim 14, Infanti teaches a system for manipulating data. Infanti does not teach rule checking and displaying an overlay of the results on a network diagram. Flowtronex teaches an overlay onto Visio that design and assigns rules to Visio shapes. While not forcefully disclosed by Flowtronex, it is reasonable to one skilled in the art to have results of the rule checking overlay on the network diagram, such as highlighting, to visually depict errors in the diagram for correction.

5. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Infanti in view of Macrae as applied to claim 8 above, and further in view of Artymuik et al (The Use of Graph Theoretical Methods for the Comparison of the Structures of Biological Macromolecules, 1995), hereinafter "Artymuik".

As to dependent claims 24 and 25, Infanti teaches a system with stencils for creating a diagram. Infanti however does not disclose comparing a plurality of stencils, using graph theoretic methods. Applicant's admitted prior art discloses wherein there a rich history of graph theoretic network tools used to analyze the properties of biological networks exists {page 4 paragraph [0004]). It is reasonably suggestive to one skilled in the art to have means for comparing a plurality of said stencils, using graph theoretic methods to analyze the differences among stencils. Artymuik teaches comparing one graph with another to determine the structural relationships that exist between them (identification of a subgraph) (page 84).

It would have been obvious to one skilled in the art at the time the invention was made to have included the use of graph theoretic methods to compare a plurality of stencils for examining and comparing of macromolecule structures.

Conclusion

6. The prior art made of record on Form PTO 892 and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrea N. Long whose telephone number is 571-270-1055. The examiner can normally be reached on Mon - Thurs 6:00 am to 3:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Hutton can be reached on 571-272-4137. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrea Long
October 5, 2007

William L. Bashore
WILLIAM BASHORE
PRIMARY EXAMINER